

REMARKS

This application pertains to novel high-performance thermal control ducts.

Claims 1-18 are pending.

Applicants gratefully acknowledge the suggested guidelines provided by the Examiner for the arrangement of the specification. Applicants believe that the application as originally filed is in substantial compliance with those guidelines, and therefore do not propose any amendments to the arrangement at this time.

The drawings stand objected to because the "at least one holed sheet...inserted between said two sheets...is not shown. Applicants submit a proposed new drawing (Fig. 10) herewith, which illustrates the aforesaid elements. The drawing does not involve any new matter, as it merely illustrates that which is already disclosed in the specification and recited in the claims. Approval and entry is respectfully requested. Upon entry of the new drawing the present objection will be obviated and should be withdrawn.

Claim 7 stands objected to because the value of "0,7" should read -0.7-. This has now been corrected, and the objection should be withdrawn.

Claims 14-18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. These

claims are not dependent claims, however, and do not purport to narrow the scope of a previous claim. The mere fact that the subject matter of a previous claim is incorporated into another claim, does not necessarily make that other claim a dependent claim. Claim 14, for example, is directed towards a method which employs the apparatus of claim 1. Although it incorporates the subject matter of claim 1, claim 14 is an independent claim. In the same way, claims 15, 16, 17, and 18 are independent claims. The rejection of claims 14-18 under 37 CFR 1.75(c), as being of improper dependent form should accordingly be withdrawn.

Claims 6-7 stand rejected under 35 U.S.C. 112, second paragraph, because the Examiner views the expression "the surface" in claim 6 as lacking antecedent basis and because the Examiner finds it unclear whether the surface referred to is the bottom of the depression or the top plane of the sheet.

Those skilled in the art would clearly understand that the surface being referred to is the top surface of the sheet, since the expression recites "...the surface of the sheet"; and not "the surface of the depression". In addition, the surface of the sheet does not need specific antecedent support, as the surface of the sheet is an inherent component of the sheet, and finds antecedent support in the recitation of the sheet itself. See, for example, MPEP § 2173.05(e); where it is explained that "the outer surface of said sphere" would not require an antecedent recitation that the sphere has an outer surface.

The rejection of claims 6-7 under 35 U.S.C. 112, second paragraph should

therefore now be withdrawn.

Claims 1-4 and 6-18 stand rejected under 35 USC 103(a) as obvious over Bae et al (US 5,826,646) in view of Wennerberg (US 3,157,229).

Applicants' claims are directed to a thermal control duct comprised of two *planar* sheets or layers, *each of which* have grooved depressions in the surface of one side. The claims recite that the grooved depressions reduce the thickness of the plates, thereby making it clear that the depressions penetrate from the surface into the interior of the plates. Moreover, Applicants' plates when brought together form a network of depressions wherein at least three depressions partially overlap and/or intersect one another to form a throughflow duct.

Bae, by contrast, concerns two plates, each of which has a plurality of ridges, not depressions, on the surface, which project away from the surface. The projecting ridges on each plate cooperate with the ridges on the other plate to form channels or ducts. Bae's two plates are therefore spaced apart from each other by the ridges, and are not "laid opposite, one on top of the other", as is the case in Applicants' thermal control duct.

Bae's channels, being formed by a series of projecting ridges instead of overlapping/intersecting depressions as in Applicants' device, would not have the structural strength of Applicants' device and, in any case, would require almost perfect alignment to prevent leaks. Manufacture and assembly would be far more difficult and

complicated than is the case for Applicants' novel thermal control duct.

The Wennerberg device, on the other hand, is formed of a *bent* sheet, which is no longer planar and does not have grooved depressions in its surface. Moreover, Wennerberg does not have at least three depressions which partially overlap and/or intersect one another to form a flowthrough duct.

The Examiner turns to Wennerberg for a holed sheet which he would add to the Bae device. However, Bae has no place for such a holed sheet. If a holed sheet were to be placed between the sheets of the Bae device, it would rest on the edges of the ridges, not on the surfaces of the plates themselves. No person skilled in the art would see any sense in such an arrangement and, more to the point, no person skilled in the art would find any reason to add Wennerberg's holed plate to Bae's device. Moreover, even if Wennerberg's holed plate were added to Bae's device, Applicants novel thermal control duct would not be formed. The holed plate cannot possibly compensate for the differences discussed above between Applicants' novel thermal control duct and Wennerberg's plate heat exchanger.

The rejection of claims 1-4 and 6-18 under 35 USC 103(a) as obvious over Bae et al (US 5,826,646) in view of Wennerberg (US 3,157,229) should accordingly now be withdrawn.

Claim 5 stands rejected under 35 USC 103(a) as obvious over Bae et al (US 5,826,646) in view of Wennerberg (US 3,157,229) as applied above and in further view

of Guntly et al (US 4,998,580). The Examiner cites Guntly as teaching a hydraulic diameter of less than 0.07 inch. Such a hydraulic diameter could not possibly overcome the differences discussed above between Applicants' device and anything that could be derived from the Bae/Wennerberg combination of references.

The rejection of 5 under 35 USC 103(a) as obvious over Bae et al (US 5,826,646) in view of Wennerberg (US 3,157,229) as applied above and in further view of Guntly et al (US 4,998,580) should accordingly now be withdrawn.

In view of the foregoing amendments and remarks, it is believed that claims 1-18 are now in condition for allowance. Reconsideration of said claims by the Examiner is respectfully requested and the allowance thereof is courteously solicited.

#### CONDITIONAL PETITION FOR EXTENSION OF TIME


If any extension of time for this response is required, Applicants request that this be considered a petition therefor. Please charge the required petition fee to Deposit Account No. 14-1263.

ADDITIONAL FEE

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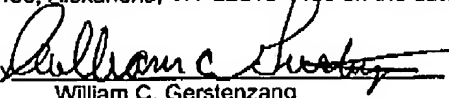
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Respectfully submitted,  
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WCG/zs  
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Date December 21, 2005